CLAIMS

What is claimed is:

1. A method of manufacturing an evaporator, comprising:

forming at least one cooling fin with at least first and second coolant tube accommodation parts;

inserting first and second coolant tubes into the first and second coolant tube accommodation parts, respectively;

expanding the first and second coolant tubes after the inserting;

bending the first coolant tube around a first jig at a first position and the second coolant tube around a second jig at a second position, the first and second positions spaced apart at different levels relative a first position along a first axis, to form first and second horizontal parts of the first and second coolant tubes, respectively;

repeating the bending of the first and second coolant tubes at least one further time at a another position along the first axis to form at least third and fourth horizontal parts of the first and second coolant tubes, respectively; and

connecting a first end of the first coolant tube to a first end of the second coolant tube,

wherein the first and second coolant tube accommodation portions of the cooling fin are coupled to a corresponding horizontal part of the first and second coolant tubes, respectively, and

wherein the cooling fin is inclined at an inclination angle relative to the first axis.

2. The method according to claim 1, wherein each second horizontal part is provided in a rear center part between the corresponding first horizontal parts.

3. The method according to claim 1, wherein each cooling fin includes a bottom end and a round part rounded on upper opposite corners of the bottom end.

4. The method according to claim 3, wherein the inclination angle between a longitudinal direction of the cooling fin and the first axis is approximately between 50 and 75 degrees.

5. The method according to claim 1, wherein the cooling fin includes at least one protrusion protruding orthogonally from a surface of the cooling fin.

6. The method according to claim 1, wherein the cooling fin has a substantially rectangular plate shape.

7. A refrigerator comprising:

an evaporator manufactured by:

forming at least one cooling fin with at least first and second coolant tube accommodation parts,

inserting first and second coolant tubes into the first and second coolant tube accommodation parts, respectively,

expanding the first and second coolant tubes after the inserting,

bending the first coolant tube around a first jig at a first position and the second coolant tube around a second jig at a second position, the first and second positions spaced apart at different levels relative a first position along a first axis, to form first and second horizontal parts of the first and second coolant tubes, respectively,

repeating the bending of the first and second coolant tubes at least one further time at a another position along the first axis to form at least third and fourth horizontal parts of the first and second coolant tubes, respectively, and

connecting a first end of the first coolant tube to a first end of the second coolant tube;

a main body including the evaporator, and having at least one storage compartment supplied with cooling air generated from the evaporator; and

at least one door covering an opening of the storage compartment,

wherein the first and second coolant tube accommodation portions of the cooling fin are coupled to a corresponding horizontal part of the first and second coolant tubes, respectively, and

wherein the cooling fin is inclined at an inclination angle relative to the first axis.

8. The refrigerator according to claim 7, wherein the main body includes an evaporator accommodation part to accommodate the evaporator, and

wherein the cooling fin in the evaporator is adjacent to a wall of the evaporator accommodation part, and is inclined toward the wall of the evaporator accommodation part.

9. A refrigerator comprising:

an evaporator manufactured by:

forming at least one cooling fin with at least first and second coolant tube accommodation parts,

inserting first and second coolant tubes into the first and second coolant tube accommodation parts, respectively,

expanding the first and second coolant tubes after the inserting,

bending the first coolant tube around a first jig at a first position and the second coolant tube around a second jig at a second position, the first and second positions spaced apart at different levels relative a first position along a first axis, to form first and second horizontal parts of the first and second coolant tubes, respectively,

repeating the bending of the first and second coolant tubes at least one further time at a another position along the first axis to form at least third and fourth horizontal parts of the first and second coolant tubes, respectively, and

connecting a first end of the first coolant tube to a first end of the second coolant tube;

a main body including the evaporator and at least one storage compartment supplied with cooling air generated from the evaporator; and

at least one door covering an opening of the storage compartment,

wherein the first and second coolant tube accommodation portions of the cooling fin are coupled to a corresponding horizontal part of the first and second coolant tubes, respectively,

wherein the cooling fin is inclined at an inclination angle relative to the first axis, and

wherein inclination angle between a longitudinal direction of the cooling fin and the first axis is between approximately 50 and 75 degrees.

10. The refrigerator according to claim 9, wherein the main body includes an evaporator accommodation part to accommodate the evaporator, and

wherein the cooling fin in the evaporator is adjacent to a wall of the evaporator accommodation part, and is inclined toward the wall of the evaporator accommodation part.

11. A refrigerator comprising:

an evaporator manufactured by:

forming at least one cooling fin with at least first and second coolant tube accommodation parts,

inserting first and second coolant tubes into the first and second coolant tube accommodation parts, respectively,

expanding the first and second coolant tubes after the inserting,

bending the first coolant tube around a first jig at a first position and the second coolant tube around a second jig at a second position, the first and second positions spaced apart at different levels relative a first position along a first axis, to form first and second horizontal parts of the first and second coolant tubes, respectively,

repeating the bending of the first and second coolant tubes at least one further time at another position along the first axis to form at least third and fourth horizontal parts of the first and second coolant tubes, respectively, and

connecting a first end of the first coolant tube to a first end of the second coolant tube;

a main body including the evaporator and at least one storage compartment supplied with cooling air generated from the evaporator; and

at least one door covering an opening of the storage compartment,

wherein the first and second coolant tube accommodation parts of the cooling fin are coupled to a corresponding horizontal part of the first and second coolant tubes, respectively,

wherein the cooling fin is inclined at an inclination angle relative to the first axis, and

wherein the cooling fin includes at least one protrusion protruding orthogonally from a surface of the cooling fin.

12. The refrigerator according to claim 11, wherein the main body includes an evaporator accommodation part to accommodate the evaporator, and

wherein the cooling fin in the evaporator is adjacent to a wall of the evaporator accommodation part, and is inclined toward the wall of the evaporator accommodation part.

13. The method according to claim 3, wherein the round part forms a section of a circle having a radius between approximately 3 mm and 50 mm.

14. The method according to claim 5, wherein the protrusion creates turbulent air flowing about the protrusion.

15. The method according to claim 1, further comprising:

supporting the first and second jigs with first and second jig plates on opposite ends of the first and second jig plates during the bending of the first and second coolant tubes.

16. The method according to claim 1, wherein the bending of the first and second coolant tubes is performed simultaneously.

17. The method according to claim 15, wherein a respective first end of the first and second jigs are rotatably connected to a corresponding jig plate so that a respective second end of the first and second jigs are movable toward and away from each other.

18. The method according to claim 1, wherein the bending of the first and second coolant tubes imparts a zigzag shape to the first and second coolant tubes.

19. An air conditioner comprising:

an evaporator manufactured by:

forming at least one cooling fin with at least first and second coolant tube accommodation parts,

inserting first and second coolant tubes into the first and second coolant tube accommodation parts, respectively,

expanding the first and second coolant tubes after the inserting,

bending the first coolant tube around a first jig at a first position and the second coolant tube around a second jig at a second position, the first and second positions spaced apart at different levels relative a first position along a first axis, to form first and second horizontal parts of the first and second coolant tubes, respectively,

repeating the bending of the first and second coolant tubes at least one further time at a another position along the first axis to form at least third and fourth horizontal parts of the first and second coolant tubes, respectively, and

connecting a first end of the first coolant tube to a first end of the second coolant tube,

wherein the first and second coolant tube accommodation portions of the cooling fin are coupled to a corresponding horizontal part of the first and second coolant tubes, respectively,

wherein the cooling fin is inclined at an inclination angle relative to the first axis, and

wherein the cooling fin includes at least one protrusion protruding orthogonally from a surface of the cooling fin.

20. The method according to claim 3, wherein the inclination angle and the round parts of the cooling fin cause defrosted water to discharge from the evaporator.

21. The method according to claim 3, wherein the bottom end of the cooling fin is adjacent to a wall of the evaporator accommodation part.

22. The method according to claim 1, wherein the inclination angle of the cooling fin is based on a difference in the respective positions of the first and second horizontal parts along the first axis.

23. The method according to claim 5, wherein the protrusion prevents the cooling fin from substantially bending.